

What is claimed is:

1. A shut-off valve assembly for regulating the flow of fluid through or from a fluid line, said assembly comprising:

5 a body attachable to or within a fluid line and having at least one chamber therein with at least one inlet and one outlet for fluid from the fluid line;

a valve seat that provides the outlet;

a baffle arrangement located within the chamber;

10 a valve member having a sealing member movable between a shielded position, whereby the sealing member is substantially shielded by the baffle arrangement from a fluid stream moving from said inlet to said outlet and in which position the sealing member is not movable by the fluid stream against the valve seat, and an unshielded position whereby the sealing member is movable by the fluid stream against the valve seat to seal the outlet; and

a drive for moving the sealing member between the shielded and unshielded positions.

15 2. The shut-off valve assembly of claim 1, wherein the baffle arrangement comprises a baffle housing which is sealed by the sealing member when in the shielded position and unsealed when the sealing member is in the unshielded position.

3. The shut-off valve assembly of claim 1, wherein the valve member further comprises a stem extending from the sealing member and the sealing member is disk shaped.

20 4. The shut-off valve assembly of claim 3, wherein the drive is operatively connected to the stem.

5. A shut-off valve assembly for restricting the flow of fluid from a fluid line into a receptacle when the fluid level within the receptacle reaches a predetermined level, said assembly comprising:

25 a body attachable to a fluid line and having an upper chamber and a lower chamber therein each with at least one inlet and one outlet for fluid from the fluid line;

a valve seat that provides the outlet for the upper chamber;

a baffle arrangement located within the upper chamber;

30 a valve member having a sealing member movable between a shielded position, whereby said sealing member is substantially shielded by the baffle arrangement from a fluid stream moving from the upper chamber inlet to the upper chamber outlet and in which position the sealing member is not movable by the fluid stream against the valve seat, and an unshielded position, whereby the sealing member is movable by the fluid stream against the valve seat to seal the upper chamber outlet; and

a drive, comprising a float pivotally connected to the valve member, for moving the sealing member between the shielded and unshielded positions,

with the construction and arrangement being such that when the float rises with the fluid level in a receptacle to a predetermined level, the sealing member moves to the unshielded position.

6. The assembly of claim 5, wherein the baffle arrangement comprises a baffle housing which is sealed by the sealing member when in the shielded position and unsealed when the sealing member is in the unshielded position.

7. A shut-off valve assembly for restricting the flow of fluid from a fluid line into a receptacle when a level of fluid within the receptacle reaches a predetermined level, said assembly comprising:

a body attachable to or within a fluid line and having at least one chamber therein with at least one inlet and one outlet for fluid from the fluid line;

a valve seat that provides the outlet;

a baffle arrangement located within the at least one chamber;

a valve member having a sealing member movable between a shielded position, whereby the sealing member is substantially shielded by the baffle arrangement from a fluid stream moving from said inlet to said outlet and in which position the sealing member is not movable by the fluid stream against the valve seat, and an unshielded position whereby the sealing member is movable by the fluid stream against the valve seat to seal the outlet;

a drive for moving the sealing member between the shielded and unshielded positions; and

a sensor system including a first sensor for sensing the level of fluid within a receptacle, with the construction and arrangement being such that when the fluid in the receptacle rises to a predetermined level, the first sensor causes the drive to move the sealing member to the unshielded position.

8. The assembly of claim 7, wherein the baffle arrangement comprises a baffle housing which is sealed by the sealing member when in the shielded position and unsealed when the sealing member is in the unshielded position.

9. The shut-off valve assembly of claim 8, wherein the valve member further comprises a stem extending from the sealing member and the sealing member is disk shaped.

10. The shut-off valve assembly of claim 9, wherein the drive comprises a solenoid, that when energized moves the sealing member to the shielded position, and a biasing member that

moves the sealing member to the unshielded position when the solenoid is de-energized.

11. The assembly of claim 10, wherein the solenoid has a magnetic coil that is wound about the stem.

12. The assembly of claim 11, wherein the biasing member is a spring wound about the stem and the spring extends between the baffle housing and the sealing member.

13. The assembly of claim 10, wherein the first sensor is selected from the group consisting of a pressure-sensitive mat, a laser sensor, an infra-red light sensor, and a micro-switch that is triggered by a float that rises with the rising fluid level within the receptacle.

14. The assembly of claim 10, wherein the first sensor is wired such that the solenoid is de-energized when the first sensor senses fluid.

15. The assembly of claim 10, wherein the sensor system further comprises a second sensor for sensing the flow of fluid through the chamber.

16. The assembly of claim 15, wherein the second sensor comprises a flow switch that closes an electrical circuit to energize the solenoid when fluid is flowing through the chamber, and if fluid is not flowing through the chamber, then the circuit is opened and the solenoid is de-energized.

17. A shut-off valve assembly for restricting the flow of fluid through or from a fluid line, said assembly comprising:

a body attachable to or within a fluid line and having at least one chamber therein with at least one inlet and one outlet for fluid from the fluid line;

a valve seat that provides the outlet;

a baffle arrangement located within the chamber;

a valve member having a sealing member movable between a shielded position, whereby the sealing member is substantially shielded by the baffle arrangement from a fluid stream moving from said inlet to said outlet and in which position the sealing member is not movable by the fluid stream against the valve seat, and an unshielded position whereby the sealing member is movable by the fluid stream against the valve seat to seal the outlet;

a drive that when energized moves the sealing member to the shielded position and when de-energized moves the sealing member to the unshielded position; and

a control mechanism for selectively energizing or de-energizing the drive.

18. The assembly of claim 17, wherein the baffle arrangement comprises a baffle housing which is sealed by the sealing member when in the shielded position and unsealed when the sealing member is in the unshielded position.

19. The shut-off valve assembly of claim 18, wherein the valve member further comprises a stem extending from the sealing member and the sealing member is disk shaped.

20. The shut-off valve assembly of claim 19, wherein the drive comprises a solenoid, that when energized moves the sealing member to the shielded position, and a biasing member that moves the sealing member to the unshielded position when the solenoid is de-energized.

21. The assembly of claim 20, wherein the solenoid has a magnetic coil that is wound about the stem.

22. The assembly of claim 21, wherein the biasing member is a spring wound about the stem and the spring extends between the baffle housing and the sealing member.

23. The assembly of claim 20, wherein the control mechanism includes a sensor that, when triggered by fluid flowing through the chamber, energizes the drive to move the sealing member to the shielded position.

24. The assembly of claim 23, wherein said sensor comprises a flow switch that closes an electrical circuit to energize the solenoid when fluid is flowing through the chamber, and if fluid is not flowing through the chamber, then the circuit is opened and the solenoid is de-energized.

25. The assembly of claim 20, wherein the control mechanism further consists of a mechanism selected from the group consisting of: a battery that provides power to the solenoid for a predetermined period of time; a timer that shuts off power to the solenoid after a predetermined period of time; and signal transmitting/broadcasting and receiving units for operating the solenoid from a remote location.

26. The assembly of claim 20 further including a pressure-relief arrangement for the chamber, said arrangement comprising:

a second sealing member attached to the stem;

a housing for the second sealing member having a valve seat and one or more fluid inlets adjacent to said valve seat; and

a coil spring extending between the second sealing member and the housing,

wherein when the chamber outlet is sealed, the second sealing member seals the valve seat of the housing and extends from within the baffle housing, and to de-pressurise the chamber the solenoid is energized to cause the second sealing member to move from its valve seat and for fluid to flow through the housing fluid inlets between said sealing members and through the housing valve seat, at which point the solenoid can also move the first sealing member to the shielded position and retract the housing within the baffle arrangement against the force of said coil spring.